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AGRICULTURAL ENGINEERING

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U. S. Department of Agriculture

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ENGINEERING

Vol. 1, No. 4.

November, 1931.

WASHINGTON, D. C.

Aerologist. Vol. 7, No. 8. August 1931.

Application and Utility of Air. By W.G.Clark. p.36.
Aeration of grain in storage to preserve and condition grain. Solves following exasperating and expensive troubles: (1) Equalizes moisture content. (2) Preserves grain indefinitely. (3) Prevents increase of acidity. (4) Maintains milling quality throughout year. (5) Dispels carbon dioxide gas and furnishes pure oxygen-bearing air. (6) Matures unripe grains and improves protein quality. (7) Dispenses with extra expense of turning grain. (8) Fumigant can be used in aerating grain-killing weevil and other destructive insects. (9) Conserving storage space and saving power.

Agricultural Engineering. Vol. 12, No.10. October 1931.

Machinery for weed control. By E.A.Hardy. p.369-373.
Study of machinery for weed control indicates that several machines of special designs are desirable, that all machines should be sharp and in good adjustment, and that great consideration must be given to problem of soil drifting as well as weed control when considering machine to use, timeliness of its use, and quality of work.

Farm structures work in the new federal Bureau of Agricultural Engineering. By S.H.McCrory. p.374.

In addition to work in progress following projects will be undertaken as rapidly as possible: (1) Studies of problems involved in modernizing farm homes; (2) Storage of potatoes, and (3) Sterilization of greenhouses and soil in houses. It will be our policy to establish cooperative relations on every project where opportunity for cooperation is offered and mutually satisfactory relationships can be established.

Agricultural Engineering. Vol. 12, No. 10. October, 1931 (Cont'd)

Harvesting Small Grain by Binding and Heading. By V. Rosam
p. 375-6

This method of harvesting differs from usual by cutting stalks into two parts, short head part and long basal part. It is accomplished with sheaf-binder bearing before its binding apparatus specially arranged cutting device. Heads and loose grain are collected into small exchangeable wagonettes hauled by binder. Behind binder is drawn, in same operation, either spring-tooth cultivator or disk harrow provided with drill box for sowing and burying mixed seed for fodder, silage or for green manure. Behind cultivator is drawn roller to make seed germinate as soon as possible. This manner of harvesting offers advantage of first removing from field only grain-heads, straw being left for handling at later time. Effect is reduction of peak load of harvesting.

Coordinating Building Plan Service. By S. P. Lyle. p. 378-80

Future of Chemistry in Agriculture. By O. R. Sweeney.
p. 381-4.

South Favors Five-Room House. By Dan Scoates. p. 384.

Place and Function of Land Reclamation in the Agricultural Program. By James A. King. p. 385-91.

We can compare this pioneering venture of converting desert wastes into productive fields with any other pioneering enterprises which have been undertaken by private initiative or business corporations along new or untrodden paths in program for development of West, with results decidedly encouraging and reassuring.

American Engineering Council. Vol. X, No. 7. September, 1931.

S. H. McCrory Heads New Bureau: Agricultural Engineering to be given new impetus; research and cooperation the keynote of new bureau. p. 58.

American Journal of Science. Vol. XXII, No. 131. November, 1931.

Tangential Master-Streams of the Adirondack Drainage.
By Rudolph Ruedemann. p. 431-440.

Pre-cretaceous Soil Horizon in Western Kentucky. By A.H. Sutton. p. 449-452.

Determination of the Radioactivity of Natural Waters and Some Results for Flowing Artesian Wells. By James A. Hootman. p. 453-463.

American Thresherman and Farm Equipment. Vol. XXXIV, No. 6.
October, 1931.

Build Soil for Profit. By B. C. King. p. 6, 14.

Much of adverse effects of drought could be overcome to considerable extent were soils in areas affected to contain five to six per cent organic matter soil content to depth of eight inches. Humus content gives to land same ability to absorb and retain moisture that sponge has. Soil blowing is directly caused by force of wind being greater than soil resistance. Examination of blown soils reveals woeful lack of organic matter that fresh manure spread with spreader would have added.

Flax Adapted to Combining. p. 13.

Combining is being used more extensively in harvesting of flax in humid areas because flax is crop that is highly resistant to lodging or shattering after it becomes ripe.

Brick & Clay Record. Vol. 79, No. 7. October 6, 1931.

Watertight Brick Masonry. By Dr. F. O. Anderogg. p. 291-300.

Adequately distributed stearate waterproofing seems necessary for such control. In addition, certain precautions in laying brick are important: joints should be about 3/8 inch in thickness, tapping down being very helpful in securing good contact; head joints should be filled; brick after being once placed should not be disturbed; and final tool-finishing should wait until mortar reaches initial set.

California Cultivator. Vol. LXXVII, No. 10. September 5, 1931.

Importance of the Statewide Water Plan. By H.W. Johnstone.
p. 205, 218.

Problem is to so conserve and coordinate water resources of state so as to supply water from those areas where there is surplus to those areas where there is deficiency. Unless this is done and done soon, there will not only be stop to any further development in large part of California, but economic destruction of enormous magnitude in great agricultural and industrial areas now highly developed.

Commercial Standards Monthly. Vol. 8, No. 4. October, 1931.

Industrial Utilization of Agricultural Wastes. By Warren E. Emley. p. 112.

Result of four years' work, insulating boards from cornstalks are now in commercial production, Maizolith (a material having properties similar to those of hard rubber) has been made from corncobs, and xylose (a rare sugar) has been made from cottonseed hulls.

Cotton Ginners' Journal. Vol. II, No. 11. August, 1931.

Planting Delinted Cottonseed Saves Great Expense of Chopping--Germinate Earlier: Good cotton stands are obtained by planting from three to eight pounds of seed per acre--less time required in planting delinted seed, being one of several savings effected by use of this process. Patented process for delinting seed with dry halogen acid gas. p.16-17.

Domestic Engineering. Vol. 136, No. 6. September 19, 1931.

Heating in Residences and Small Structures. By Harold L.Alt. p. 32-35, 123-124.

Vol. 137, No. 1, October 3, 1931.

Once a Dwelling--Now a Three-Family House. By Harry S. Davidson. p. 32-35.

Heating in Residences and Small Structures. By Harold L.Alt. Pt. 2. p. 40-41, 131-134.

Electric Journal. Vol. 28, No. 10. October, 1931.

Your Lights at Home. By Mary Anne Sheppard. p. 553-556.

Air-Conditioning In the Home. By A. W. Wrieden. p. 571-572.
It resolves into four primary factors: air supply, temperature control, humidifying air in circulation. Other factors are elimination of dust and elimination of odors.

Electric World. Vol. 98, No. 16. October 17, 1931.

Rural electrification and present commodity markets:
Editorial. p. 683

Rural Lines for \$500 per Mile. By M. T. Crawford. p.690-691.

Selling Farmers Electricity on Community Basis. By Maurice C. Burritt. p. 696-698.
Line extensions on an area basis. Can labor cost be reduced? Community basis for rates. Financing wiring and equipment purchases . Educational program needed.

Man Power Plus. By Edwin Gruhl. p. 702-705. Analysis of new Russian textbooks. Mechanical aids a curse in America and a blessing in Russia. Study in contrasts.

Electrical World. Vol. 98, No. 17. October 24, 1931.

Making Hay Though the Sun Does Not Shine. p. 744.

Consists of three concentric revolving drums through which green hay is rotated with hot gases (1,000-1,500 deg. F.) from oil-burning furnace. Chopping machine is operated by 20-hp. motor. Hay and hot gases are drawn through three concentric cylinders by large exhaust fan at further end of drier. Cylinders are rotated by 25 hp. electric motor. Mixture rolls back through first and second cylinders and finally passes through largest one to blower attachment, where it is sent to separator, which permits escape of moisture-laden air and collects dried hay ready for mow or storage bin. Temperature at outlet varies from 100 to 170 deg. Cylinder or revolving drum is 20 ft. long and about 7 ft. in diameter.

Vol. 98, No. 18. October 31, 1931.

Electragists Recommend Essentials of Adequate House Wiring.

p. 789-792.

Major characteristic of recommendations is that each one has some definite benefit to user to justify its application, convenience of use, convenience of control or convenience in extending utilization of electric service.

Engineering & Contracting. Vol. LXX, No. 10. October, 1931.

Construction Costs of Reclamation Projects of U. S. Bureau of Reclamation. p. 254.

Coordinated Laws of Concrete Mixtures and Their Application.

By Joseph A. Kitts. p. 255-259.

Researches on Durability of Concrete: Some features of current studies of the Portland Cement Association, particularly those relating to the part played by the aggregates. By H. F. Gonneman. p. 260-262.

Reports Progress in Better Use of Irrigation Water Supply.

p. 266.

R. L. Parshall reports more accurate measurement of water used and progress in developing methods to handle sand and silt accumulations as recent developments in more efficient utilization of water supply. Advocates pumping supplemental water from wells where possible. It is possible to increase usefulness of present water supply by 25 per cent.

Engineering News-Record. Vol. 107, No. 14. October 1, 1931.

Separate Licenses for Engineers: Editorial. p. 518-519.

Professional self-interest urges maintenance of blanket license laws. Public interest will be better served by special licenses for each major group of specialists.

Relief for Engineers: Editorial. p. 519.

Flood Control on Alluvial Rivers--I: Principles governing the planning of flood control--methods of flood control--bypasses--storage or detention of reservoirs, and channel improvements, with special reference to levees. By Fred H. Tibbetts. p. 520-524.

Irrigation Proves Success Where Annual Rainfall is 40 In.
p. 524.

Experiments conducted by Oregon Agricultural Experiment Station on field, truck garden and fruit crops have demonstrated that agricultural production in the Willamette Valley can profitably pay cost of irrigation. This region has been under agricultural production three-quarters of century and because of its 40 in. annual rainfall had until recently not been considered as needing any supplemental water supply.

Unknowns in Earth Pressure: Letter from Jacob Field. p. 540

Vol. 107, No. 16. October 15, 1931.

Lightness and Low Cost Obtained by New Penstock Gate Design:
Radical departure from normal hydraulic gate design adopted for emergency gates in the pressure tunnels at Calderwood dam in Tennessee--Difficult fabrication and welding problems overcome. By Adolph J. Ackerman. p. 600-604.

Flood Control on Alluvial Rivers--II: Design and construction of flood-control structures on the Sacramento River, with particular reference to levee section, freeboard and protective covering. By Fred. H. Tibbetts. p. 606-609.

Electric-Resistance Strain Gage Measures Stresses in Concrete:
Device embedded in mass concrete records stress to 10 lb. per sq. in.--Principle based on resistance of wire under tension. By E. C. Eaton. p. 615-616.

Engineering News-Record. Vol. 107, No. 18. October 29, 1931.

Water-Sewage-Water Cycle--Discussion. Being the views of Western and Middle Western engineers and sanitarians on the practice, referring to its objections and its future. p. 683-685.

Re-use of water in desert country, by Jane H. Rider.

Economies of commercial use, by Burton Lowther.

Absolute necessity the only justification, by N.T.

Veatch, Jr. Only for isolated cases, by H.W. Streeter.

Farm Ranch. Vol. 50, No. 34. August 22, 1931.

Cotton Fiber Quality Affected by Ginning Methods. p. 10. Successful cleaning and extracting depends on moisture content of seed cotton; and that excessive moisture content reflects itself in processes of ginning, causing among other things, corresponding loss of shortening of fiber lengths, and lowering of grade--in some instances as much as four grades. Inferior preparation of cotton in Delta of the Mississippi is usually result of ginning early, green, sappy cotton and late rain-soaked cotton without proper conditioning, and of operating gins at full capacity on long-staple cotton.

Farm Implement News. Vol. 52, No. 41. October 8, 1931.

Hay Dryer Beats Wet Harvest Handicap. By Geo. H. Watson. p 18. Essential elements of dryer used on this farm in order of their contact with supplied hay, are as follows:

1. Elevator which receives chopped hay from ensilage cutter and delivers it to dryer. This elevator is of the chain-slat type operating in steel trough and has steel hopper at hay receiving end.

2. Four blade, paddle-wheel-like hopper intake gate. This gate admits green hay to dryer in regular amounts and at controllable intervals.

3. Dryer drums, three in number, are concentrically arranged and hay enters smallest drum and is discharged from largest.

4. Hot gases are also introduced into smallest drum at same point and at same time with green hay. These gases are taken directly from combustion chamber of heating unit. Their initial temperature is about 1,500 degrees F. Either crude oil or gas may be used as fuel.

5. As hay and gases leave largest drum they are forced by suction fan into a steel cyclone collector, where they are separated. Dried hay falls into lower level hopper and is blown into sacking pipes or to bin storage. Moisture-laden gases escape to atmosphere.

Farm Implement News. Vol. 52, No. 42. October 15, 1931.

Telling the World About Good Farm Equipment. By Research Department National Association of Farm Equipment Manufacturers. p. 16-17.

Tank heater days approaching. Roughage mill makes feed go further. Work for the duckfoot cultivator. Money making separator. Better done with spreader. Good equipment helps shorthorn breeder. Steel cribs prevent losses.

Life of Farm Machines in Ohio. p. 17.

Vol. 52, No. 43. October 22, 1931.

Harvester Company Names Binder Twine Prices for Next Year. Announces reductions which make quotations the lowest in thirty years with one exception. Also issues statement showing reductions on farm machines. p. 8, 22.

New England States Fight Borer with Machines. p. 17.

Bureau of Agricultural Engineering, of U. S. Department of Agriculture, is demonstrating in that section use of binders with low-cutting attachments, and of special short-handle hoes for cutting low by hand.

Vol. 52, No. 44. October 29, 1931.

New Machine Masticates Straw for Mulching Purposes. By. D. Phillips. p. 23.

Baled straw or hay is fed into machine and comes out thoroughly loosened and cut into pieces 4 to 5 inches long. It spreads easily and is said not to interfere with irrigation. Machine consists of set of circular saws mounted upon shaft with flails or beaters between them, not unlike threshing machine cylinder. There is feed table upon which bales are placed to be fed into these saws at proper speed. Cut hay or straw falls out upon the ground below the cylinder and is left in windrows between trees as the outfit moves through orchard. It is driven by four-cylinder motor.

Vol. 52, No. 45. November 5, 1931.

Tractor Census: Complete State Reports Show Total of 920,378 on Farms April 1, 1930. p. 16.

Convention of the National Association of Farm Equipment Manufacturers. Proceedings of the thirty-eighth annual meeting held in Chicago Oct. 21, 22 and 23, 1931. p. 20-23.

Fuel Oil Journal. Vol. X, No. 5. November, 1931.

Flame Color Illusions: A reply to Arthur H. Sonner's article, "Is Color or Shape of Flame Important?", in the September Fuel Oil Journal. By Han A. Kunitz. p.11-12, 98,100-101.

How to Correct Common Draft Troubles. - p. 27.

Genie Civil. Vol. XCIVII No. 17. April 25, 1931.

Résistance des Matériaux: Essais de résistance mécanique des bois imprégnés aux résines synthétiques. By J. Campredon. (Tests of the mechanical resistance of wood impregnated with synthetic resin.) p. 426-429.

Génie Rural & Grande Revue Agricole. September, 1931.

Appareils Exposés. (Equipment explained) (Various types of tractors). p. 26-32.

Section des charrues. (Section on plows.) p. 33-34.

Section du Comité Central de Culture Mécanique. (Section of General Committee on Mechanical Culture. p. 35-37.

Heating and Ventilating. Vol. XXVIII, No. 10. October, 1931.

Calculations for Radiant Heating. By T. Napier Adlam. p. 62-67. Discusses radiant heating with gas, summarizes various arguments in connection with floor versus ceiling radiant heating, shows how to calculate sizes of heating surfaces, and briefly touches on subject of fuel consumption with radiant heating systems.

Hoard's Dairymen. Vol. 76, No. 15. August 10, 1931.

Building a Trench Silo. By A. B. Bryan. p.549.
Silo cost \$29.35 to construct.

Vol. 76, No. 18. September 25, 1931.

Success with Trench Silos. By Gene Huff. p. 634.
Cost per ton capacity of small silo is \$1.00 and of larger one \$0.80.

Housing. Vol. 20, No. 3. October, 1931.

President Hoover's Housing Congress at Washington December 2-5.
p. 179-184. Gives Committee Chairmen.

Ice & Cold Storage. Vol. XXIV, No. 402. September, 1931.

New Refrigerator Road Car: Silica-gel system applied to a Sentinel wagon. p. 229-230.
Diagram shows lay-out of plant on Sentinel wagon.

Ice & Cold Storage. Vol. XXXIV, No. 403, October, 1931.

Graphical Representation of Characteristic Data: Some useful charts for the refrigerating engineer. p. 248-251.

Implement and Machinery Review. Vol. 57, No. 678. October 1, 1931.

Future of the Harvester-Thresher in England: Editorial. p.596.

Harvester-Thresher on the Continent: Editorial. p. 596-597.

German Developments in Harvester-Thresher Work: Editorial.
p. 597-598.

New Method of Harvesting Corn and Fodder Crops. p. 602-604.

Implement & Tractor Trade Journal. Vol. XLVI, No. 21. October
10, 1931.

Made to Order Crop for Combine: Wheatland Sorghum is developed
in order to permit wheat growers to use equipment for other
lines of production. p. 9.

Vol. XLVI, No. 22. October
24, 1931.

Farm Use of "Juice" Increasing: Half of million electrically
equipped farms derive power from private plants--a growing
opportunity for dealers. By E. T. Leavitt. p. 9.

Industrial and Engineering Chemistry. Vol. 23, No. 10. October, 1931.

Quick-Freezing Citrus Fruit Juices and Other Fruit Products:
A Preliminary Report. By E. M. Chace and H.D. Poore.
p. 1109-1112.

Acid Sludge Digestion. By E. L. Pearson and A.M. Buswell.
p. 1144-1145.

Irrigación en Mexico. Vol. III, No. 6. October, 1931.

El uso de Sifones Invertidos como Solución Económica para
Derivar Agua de Corrientes de Carácter Torrencial.
By Leonel Lemus.

(The use of inverted siphons as an economic solution
for diverting swiftly running water.) p. 504-508.

Influencia del Aire en los Conductos Cerrados para Agua.
By Guillermo Rode. p. 508-518.

Usos de la Electricidad en la Agricultura y sus Industrias
Derivadas. By Rolfo Ortega M., I.M.E. (Uses of electricity
in agriculture and the industries derived thereby.)
II.--Preparacion de las tierras de cultivo. (Preparation
of the ground for cultivation.)

Jersey Bulletin. Vol. L, No. 40. October 7, 1931.

Use of Electricity on American Farms. By Truman E. Heinton.
p. 1695-1696, 1714-1716.

Journal of the Ministry of Agriculture. Vol. XXXVIII, No. 5.
August, 1931.

Use of Peat in Horticulture. By Katharine H. Johnstone.
p. 474-481.

Use of Fresh Peat. Peat in Connexion with Manuring.
Sources and Supplies of Peat for Horticultural Purposes.

Magazine of Wall Street. Vol. 48, No. 13. October 17, 1931.

Low Prices--the Key to Domestic and Foreign Trade. Not more
but cheaper production, the program for the United States.
By Charles Benedict. p. 828-829, 876-878.

LeMarchand. Vol. 7, No. 17. September, 1931.

Tracteurs et l'Agriculture Industrielle. By Gabriel Devoisins.
(Tractors and industrial agriculture.) p. 11-21.

Mechanical Engineering. Vol. 53, No. 10. October, 1931.

Thermodynamics of High-Pressure Water: A physical explanation
of the variations of its thermal properties, designed to
afford a better understanding of these properties when
used in engineering calculations. By Julian C. Smallwood.
p. 714-718.

Vol. 53, No. 11. November, 1931.

Response of Thermocouples: Effects of Temperature Gradients
in the hot junction--effects of varying temperatures on
the indications of a thermocouple--methods for predicting
the performance of any couple of cylindrical form.
By Neil P. Bailey. p. 797-804.

... S. M. E. Annual Meeting Program. New York, November
30 to December 4, 1931. p. 853-854.

Synopses of A. S. M. E. Annual Meeting Papers. p. 855-862.

Municipal Sanitation. Vol. 2, No. 11. November, 1931.

New York State Sewage Officials Discuss Effects of Stream
Pollution. By Staff Reporters. p. 541-543.

Nebraska Farmer. Vol. 73, No. 40. October 3, 1931.

Mechanical Corn Picker is Practical. By Ivan D. Wood. p. 16.

New England Homestead. Vol. 103, No. 11. September 12, 1931.

Electricity--The Modern Power for Silo Filling. By K.J.T. Ekblaw. p. 3-4.

Vol. 103, No. 13. September 26, 1931.

When Winter Comes--Snap the Switch: Electric heat is another convenience for the electrical home. By Guy Bartlett. p. 3, 6-7.

Storing the 1931 Apple Crop: Maturity and care during harvest greatly influence keeping quality. By E. J. Rasmussen. p. 5, 7.

New Jersey Agriculture. Vol. XIII, No. 11. November, 1931.

Insulating Wallboard Saves Coal: An inch of it beats a foot of stone wall. By E. R. Gross. p. 3, 5.

New Reclamation Era. Vol. 22, No. 10. October, 1931.

Development of Supplemental Storage Water Supplies by the Federal Government. By B. E. Stoutemyer. p. 206-209. American Falls Reservoir. CleElum Reservoir. Kennewick Project. Owyhee Project. Vale Project. Small Baker Project. Salk Lake Basin Project in Utah. Hoover Reservoir. Power Receipts Pay the Entire Cost.

New Mexico Legislation in 1931. p. 210-212. By H.J.S. Devries. Underground waters subject to appropriation. Irrigation district taxes. Civil service systems. Local improvement districts. Artesian conservancy districts. Guaranteed fund--conservancy districts. Title instruments--reduced recording costs to irrigation districts.

Construction of the Echo Dam on the Salt Lake Basin Project, Utah. By Kenneth B. Keener. p. 214-216.

Oregon Farmer. Vol. LIII, No. 12. September 17, 1931.

Irrigation by "Sprinkling" Has Promising Future. p. 3.

This experiment is not an attempt to recommend sprinkler system over flood method of irrigation but rather to study feasibility of irrigating farms with sprinklers that could not otherwise be irrigated because of low water supply and rolling topography that make it impossible to use flood irrigation.

Pencil Points. Vol. XII, No. 10. October, 1931.

Modern House Should Be Insulated. By Arthur Bates Lincoln.
p. 746-748.

Importance of Insulation. Construction Methods Affect Heat Transmission. Where the House Should be Insulated. Materials for Insulation. Insulation in Bags. Boards for Insulation.

Roofing for Colonial Homes. By Rossel E. Mitchell. p. 773-774.

Vol. XII, No. 11. November, 1931.

Wasting or Saving Money in Foundations. By H. Vandervoort Walsh and Alexander T. Saxe. p. 807-809.

Sensing cost of excavation from different sites; where excavation costs go down foundation costs go up; Rules to observe in estimating total costs of foundation work.

Pineapple Quarterly. Vol. 1, No. 3.

Calcium Treatment of Acid Soils. By William J. Hartung, O.C. Magistad and Karsten Thot. p. 139-145.

Power. Vol. 74, No. 13. September 29, 1931.

Trends in the Design of Refrigerating Coils. By R.S. Wheaton. p. 456-457.

Vol. 74, No. 17. October 27, 1931.

How Many Engineers Are Now Unemployed? Analysis of survey based on Engineering Societies Employment Service and various state and government agencies. By H. M. Friend. p. 600-604.

Vol. 74, No. 18. November 3, 1931.

New Ice-Making Machine. p. 647.

Apparatus consists of cylinder within which is located set of paddles driven through extended shaft. Cylinder is provided with cored jacket in which ammonia is evaporated to freeze water passing through cylinder bore; frozen product in shape of snow, is deposited on interior surface, from which it is removed by internal machine. Ice is washed out of machine in circulating stream of water and deposited in pile. Ice made by this machine resembles wet snow and packs very readily.

Power Plant Engineering. Vol. XXXV, No. 19. October 1, 1931.

Economical Small Plant Refrigeration: Brine spray system with welded piping in ammonia lines is easily built and operated. By J. F. Staley. p. 988-989.

Vol. XXXV, No. 20. October 15, 1931.

Constants Used in Computations with Air: Discussion of some of the fundamental constants used in engineering calculations with air. By Sanford A. Moss. p. 1026-1027.

Standard Atmospheric Pressure. Standard Atmospheric Temperature. Absolute Fahrenheit Temperature. Standard Absolute Fahrenheit Atmospheric Temperature. Density of Air Moisture. Density of Normal Air. Specific Heat of Air.

Safety for Mechanical Refrigeration. p. 1030.

Vol. XXXV, No. 21. November 1, 1931.

Combating Ice on Flashboards of Dams. Steam jet ice saws, compressed air bubblers and electric lamps with reflectors are commonly used. p. 1069-1070.

Manila Rope--Tests and Care. p. 1074-1075.

Public Roads. Vol. 12, No. 8. October, 1931.

Procedures for Testing Soils for the Determination of the Subgrade Soil Constants. By A.M. Wintermyer, E.A. Willis and R.C. Thoreen. p. 197-207.

Graphical Solution of the Data Furnished by the Hydrometer Method of Analysis. By E. A. Willis, F.A. Robeson, and C. M. Johnston. p. 208-215.

Refrigerating Engineering. Vol. 22, No. 4. October, 1931.

Flakice--New Developments: New and Useful Form of Ice Developed to Meet Consumer Need--Manufacturing Cost Low. By Crosby Field. p. 227-233.

Chemistry of Water Treatment. By Dana Burks, Jr. p. 247-251, 264.

More on Silica Gel. p. 252-253.

Subject of air conditioning by silica gel, by refrigeration, or by combination of two.

Refrigerating World. Vol. 66. No. 10. October, 1931.

Thinking Through This Quick Freezing Business. By Clarence W. Vogt. p. 16-19, 48-49.

Erection and Protection of Refrigerating Insulation. p. 23-25.

Refrigeration. Vol. 50, No. 4. October, 1931.

Lubrication of the Refrigeration Machine: Simple Rules for the Guidance of the Operating Engineer in Handling His Lubricating Problems. By George V. K. Greene. p. 14-16, 20.

Frozen Foods Association of America Holds Informal Meeting. p. 26-30.

Safety of "Dry-Ice" By D. H. Killeffer. p. 46-48.

Review of Scientific Instruments. Vol. 2, No. 6. June, 1931.

Instrument for Measuring Small Displacements. By B. F. Langer. p. 336-342.

Instrument is described which measures and records small displacements such as vibrations and strains from dynamic loads. Results of some recent development work on this instrument are given.

Rural Electrification and Electro-Farming. Vol. VII, No. 76. September, 1931.

"Electric Tomatoes" in Lancashire: Successful Soil Heating Experiments. p. 108-109.

Electric Light Saves Potato Stocks. Experiment definitely proved that artificial light is just as effective as sunlight in preventing tuberous growths. It is immaterial what kind of lamps are used. Cost of installation and current consumed are insignificant compared with huge saving effected. p. 124-125.

Vol. VII, No. 77,
October, 1931.

Electricity on a Dairy Farm. p. 139-142.

Tobacco Curing by Electricity. p. 150-151.

General advantages of using electricity for tobacco curing as shown by these investigations may be summarized as follows: (1) Fire risk is reduced to minimum; (2) there is no possible chance of taint from flue gases; (3) aroma of dried leaf is noticeably stronger; (4) drying can be speeded up without use of excessive temperatures; (5) minimum of attention is needed; (6) colour is brighter; (7) grade is more uniform.

Rural Electrification and Electro-Farming. Vol.VII, No.77.

October, 1931. (Cont'd)

Illumination of Farm Buildings. p.158-160.

Soil Science. Vol.XXII, No.4. October, 1931.

Effects of Vegetation and Climate upon Soil Profiles in Northern and Northwestern Wyoming. By James Thorp. p.283-297.

Successful Farming. Vol.XXIX, No.11, November, 1931.

Illinois Corn Cost Figures. By H.C.M.Case. p.7,64-65.

Careful attention should be given to selection of amount and type of power which best suits farm need because power and machinery represents largest cash outlay on most Cornbelt farms. Chart shows distribution of power by two-weeks periods on well-operated central Illinois farm.

As Good As New. By W.A.Foster. p.12,61.

Old farmhouse which is too good to tear down may be made fit, modern, and efficient at less cost than building new.

Sugar News. Vol. XII, No.7. July, 1931.

New Method of Fertilizer Application: Letter. p.441-442.

Plow, with applicator attached, is hitched to working animal--same as in ordinary operation of cultivating land. Plow is run in between cane rows, plowing ground as near as possible to cane roots. As soil is turned out near roots fertilizer is dropped, amount of which can be determined by turn of handle.

Wallaces' Farmer. Vol.56, No.35. August 29, 1931.

Saving Feed With a Temporary Silo. p.6.

Water Works and Sewerage. Vol.LXXVIII, No.10. October, 1931.

Use of Charcoal and Activated Carbon in Water Treatment. p.287-290.

Programs of Coming Conventions. p.306-308.

Ohio Conference on Sewage Treatment. Ohio Conference on Water Purification. Fall Meeting, New York State Sewage Works Association. 37th Annual Convention, American Society of Municipal Engineers. Conference, Virginia Water and Sewage Works Association. Missouri Water and Sewerage Conference.

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Program, Twelfth Annual Convention, A.W.W.A., California Section. p. 11.

Water Problems in Honolulu, Hawaii; Rainfall ranges from 10 to 240 inches at different elevations on island; artesian water creation is one of most remarkable in world. By J.F. Kunesh. p. 13-17.

Use of Water in Arid and Semi-Arid Cities. Irrigation of lawns and gardens calls for careful analysis; positive effect of metering is evident; average consumption is greater. By N. T. Veatch, Jr. p. 30-31.

Table 1.-Apparent irrigation duty in several cities. Expressed in acre feet per year. Fig. 1. Relation between temperature, rainfall and pumpage for years 1928 and 1929--Tucson, Arizona. Table 2.- Tabulation of data on water consumption. In practically all cases year of period is 1929.

Western Farm Life. Vol. XXIII, No. 17. September 1, 1931.

Nicks Brothers Irrigate 160 Acres by Pumping. By Elmer J. Johnson. p. 4, 20.

Install electric power and find it cheaper than using ditch water.

Farmers Are Cutting Silo Filling Costs: Proper machinery and equipment with careful planning reduce labor required. By L. T. Leavitt. p. 5

Along the Irrigation Ditches. By E. J. Leonard. p. 15.

Wisconsin Agriculturist and Farmer. Vol. LVIII, No. 38.
September 19, 1931.

Machinery Kills Quack Grass: Methods described for successful fight against this pest. p. 3.

Vol. LVIII, No. 39.

September 26, 1931.

Farm Machinery Costs and Prices: Facts that influence relative price situations in agriculture and equipment. p. 3.

The Library has just received the following publications:

Artificial reseeding on western mountain range lands. By C.L. Forsling and William A. Dayton. 1931. 48 p. (U.S. Dept. of Agriculture Circular 178.)

Better Homes in America. Better Homes Week, April 24 to May 1, 1932. 48p. (Better Homes in America, Pub. 23. Washington, D.C.) Guidebook for better homes campaigns.

Building and loan construction standards: Specifications for residential building. By John M. Wyman. Cincinnati, Ohio, American Building Association News Co., 1930. 188p.

Care of milk utensils on the farm. By R.J. Posson and Ralph P. Hotis. 1931. 9p. (U.S. Dept. of Agriculture. Farmers' Bulletin 1675.)

Classification of farm land in California counties, 1930. 1931. 1p. (California State Chamber of Commerce--Research Department, Economic Survey Report No. 6, Series 1931-1932)

Commercial fertilizers and soil fertility in California. By P.L. Hibbard. 1931. 37p. (California Agri. Ext. Service Circular 57.)

Comparative study of alcohol, gasoline, and kerosene as fuel for tractor engines. By A.L. Teodoro. 1931. 295-327p. (Separate from The Philiphine Agriculturist 20:295-327)

Cost of pumping and duty of water for rice on the Grand Prairie of Arkansas. By B. S. Clayton. 1931. 48p. (Arkansas Agricultural Experiment Station. Bulletin 261.)

Development of an electric dairy utensil sterilizer. By H. Elmer Besley. 1931. 56p. mimeographed. (University of Maryland Agricultural Experiment Station, College Park, Md.)

Development of the Klamath County potato industry: A record of directed agricultural progress. By F.L. Ballard. 1931. 11p. (Oregon State Agricultural College Extension Service. Extension Bulletin 437)

Driers for seed-cotton. By Charles A. Bennett. 1931. 10p. Mimeographed. (U.S. Dept. of Agriculture, Bureau of Agricultural Engineering.

The Library has just received the following publications: (Cont'd)

Electric light and power industry in the United States:
With chapters on the electric railway and gas industries,
and an up-to-date bibliography of public utility refer-
ences. Revised to January 1, 1931. 1931. 186p.
(National Electric Light Association. Chapters on
electricity in the home, and rural electrification.

Explosives in agriculture. 1931. 87p. Published by The
Institute of Makers of Explosives.

Farm power utilization and costs, South Carolina. By B.A.
Russell. 1931. 43p. (South Carolina Agricultural
Experiment Station, Bulletin 280.)

Further experiments on the discharge of models of sluices.
By H. E. Hurst. 1930 23p. (Egypt. Ministry of Public
Works. Physical Department Paper No. 25.)

Graphis summary of American agriculture based largely on
the Census. By O.E. Baker. 1931. 228 p. (U.S. Dept.
of Agriculture Miscellaneous Publication 105)

Handbook of reinforced concrete building design, in accord-
ance with the 1928 Joint Standard Building Code. By A.R.
Lord. 1928. 261p. (Authorized reprint from copyrighted
proceedings. 1924-1928. American Concrete Institute.)

Insecticides, equipment and methods for controlling orchard
insect pests. 1931. 92p. (U.S. Dept. of Agriculture.
Farmers' Bulletin 1666.)

Konstruktion landwirtschaftlicher Bauwerke. By Th. Gesteschi.
Berlin, Julius Springer, 1930. 284p. (Agricultural
Building Construction)

Laws relating to construction of drains, with an appendix of
blank forms. 1931. 142p. By Herbert E. Powell. (Michigan
Commissioner of Agriculture)

Laws relating to the Department of Agriculture. 1931. 282p.
(Compiled in the office of the Michigan Department of
Agriculture.)

Local rural leaders in Washington. By Harvey W. Starling and
Fred R. Yoder. 1931. 35 p. (Washington Agricultural
Experiment Station Bulletin 257.)

The Library has just received the following publications: (Cont'd)

Marketing and distribution of fruits and vegetables by motor truck. By Brico Edwards and J.W. Park. 1931. 88p. (U.S. Dept. of Agriculture Technical Bulletin 272.)

Minutes of proceedings of Punjab Engineering Congress, Lahore. 1931. 152p.

New fertilizer materials. By Albert R. Merz. 1931. 14p. (U.S. Dept. of Agriculture Circular 185.)

Number and value of California farms by counties, 1920-25-30. 1931. 1p. (California State Chamber of Commerce--Research Department Economic Survey Report No.5, Series 1931-1932.)

Petroleum oils and oil emulsions as insecticides, and their use against the San Jose Scale on peach trees in the South. By H.S. Swingle and Oliver I. Snapp. 1931. 48p. (U.S. Dept. of Agriculture Technical Bulletin 253.)

Physical properties of earths. By John H. Griffith. 1931. 128p. (Iowa Engineering Experiment Station Bulletin 101)

Range feed hopper. By L.M. Roehl and W.G. Krum. 1931. 15p. (New York State College of Agriculture, Cornell Extension Bulletin 215.)

Reclamation of land from the sea. By F.M. Du - Plat - Taylor. London, Constable and Company, ltd., 1931. 153p. Author discusses reclamation by enclosure and by filling, with description of English work and the Zuyder Zee. One chapter is devoted to lay-out of reclamation areas, with discussion of sluices of various kinds. Another chapter is devoted to plant for reclamation. It deals largely with plant for filling. Of greatest interest perhaps is the description of small (6" and 8") suction or sand pump dredges. Another brief chapter is devoted to pumping machinery for drainage. One short chapter discusses the economics of reclamation, and in the closing chapter, tables and data are given. While the book is now, much of the material is quoted from old texts. Prices quoted are frequently pre-war. Aside from giving an idea of present status of reclamation work in England, the text contains little of value to American engineers except the chapter on sluices.

Relation of quality of cotton to prices paid to farmers in Alabama. By J.D. Pope and Carl M. Clark. 1931. 48p. (Alabama Polytechnic Institute. Bulletin 235.)

The Library has just received the following publications: (Cont'd)

Report of meeting of Advisory Council on research in mechanical farm equipment, Chicago, Ill., June 20, 1931. 1931 5p. mimeographed. (U.S. Dept. of Agriculture, Bureau of Agricultural Engineering.)

Rope and its uses on the farm. By H. A. Leland, W.C. Harrington, and G.E. Pushee. 1931. 36p. (Mass. State College, Extension Service. Extension Leaflet 139.)

Safety bull pens. By George L. Waugh. 1931. 4p. (University of New Hampshire Extension Service, Extension Circular 128.)

Screening and mosquito proofing of houses. By C.P. Cooglc. 1931. 21p. (Alabama State Board of Health.)

Sisal and henequen, plants yielding fiber for binding twine. By Lester H. Dowey. 1931. 12p. (U.S. Dept. of Agriculture Circular 186.)

Soil erosion and its prevention. (Partial list of references) Compiled by Dorothy Graf, Librarian. 1931 33p. Mimeographed. (U.S. Dept. of Agriculture, Bureau of Agricultural Engineering.)

Soils of Texas. By W.T. Carter. 1931. 192p. (Texas Agricultural Experiment Station Bulletin 431.)

Sweet potatoes. By A. P. Spencer. 1931. 32p. (Agricultural Extension Service, University of Florida. Bulletin 61.)

Terracing experiments, 1930-1931. H.H. Finnoll. 1931. 9p. (Panhandle Agricultural and Mechanical College. Panhandle Bulletin 31.)

Use and construction of the concrete septic tank. 1931. 20p. (Alabama State Board of Health, Bulletin S-1.)

Water resources of Virginia. By J.J. Dirzulaitis and G.C. Stevens. 1927. 510p. (Virginia Geological Survey Bulletin 31.)

Winter-time management of the laying flock. By Willard C. Thompson. 1931. 32p. (N.J. Agri. Expt. Station Circular 249.)

